

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.

Paper No. 28

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JUN ONO, and TORU SUDA

Appeal No. 96-2224
Application 08/047,498¹

HEARD: May 04, 1999

Before HAIRSTON, JERRY SMITH and HECKER, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134

¹ Application for patent filed April 19, 1993.

Appeal No. 96-2224
Application No. 08/047,498

from the examiner's rejection of claims 2-4, which constitute all the claims remaining in the application. A first amendment after final rejection was filed on June 6, 1995 but was denied entry by the examiner [Paper No. 16]. A second amendment after final rejection was filed on July 17, 1995 and was entered by the examiner [Paper No. 19].

The disclosed invention pertains to a mixer input circuit for converting an unbalanced RF signal into a balanced signal to be mixed with an oscillation signal. The circuit is made up of a distributed constant tuning circuit section, an imbalance-balance conversion section and a mixer. The invention uses a distributed constant line having first, second and third central conductors which allows for transformer coils to be eliminated.

Representative claim 3 is reproduced as follows:

3. A mixer input circuit for converting a signal from a tuning section into a balanced signal and outputting the balanced signal, said mixer input circuit comprising:

a distributed constant tuning circuit section having a distributed constant line including a first central conductor to which an imbalanced RF signal is connected and a second central conductor coupled to said first central conductor;

an imbalance-balance conversion section having a

Appeal No. 96-2224
Application No. 08/047,498

third central conductor of said distributed constant line coupled to said second central conductor of said distributed constant line in said distributed constant tuning circuit; and

a mixer having a pair of input terminals to which a balanced output signal from said imbalance-balance conversion section is supplied, wherein a respective phase and a respective amplitude of the balanced output signal are adjusted relative to each other by connecting a pair of impedance elements in series between respective ends of said third central conductor of said distributed constant line and respective ones of said pair of input terminals of the mixer.

The examiner relies on the following references:

Kane	4,619,001	Oct. 21, 1986
Takahashi et al. (Takahashi)	4,864,644	Sep. 05, 1989

Claims 2-4 stand rejected under 35 U.S.C. § 103. As evidence of obviousness the examiner offers Kane in view of Takahashi.

Rather than repeat the arguments of appellants or the examiner, we make reference to the brief and the answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejection advanced by the examiner and the evidence of obviousness relied upon by the examiner as support for the rejection. We have, likewise, reviewed and taken into

consideration, in reaching our decision, the appellants' arguments set forth in the brief along with the examiner's rationale in support of the rejection and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the obviousness of the invention as set forth in claims 2-4. Accordingly, we reverse.

We now consider the rejection of claims 2-4 under 35 U.S.C. § 103 as unpatentable over the teachings of Kane in view of Takahashi. In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine,

837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references

Appeal No. 96-2224
Application No. 08/047,498

to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

With respect to independent claim 3, the examiner notes the teachings of Kane and observes that Kane does not disclose the distributed constant line having the first, second and third central conductors as claimed. The examiner indicates that Kane suggests the obviousness of incorporating the unbalanced to balanced mode converter into the mixer circuit. In the view of the examiner, this modification of

Kane would meet the three central conductors as recited in claim 3. Finally, the examiner notes that this modification would not teach the impedance elements as recited in claim 3. Takahashi is cited as a teaching of the connection of impedances as claimed. The examiner concludes that the Kane device as obviously modified by Takahashi results in the claimed invention [answer, pages 3-4].

Appellants argue that Kane does not teach the provision of a balanced input from tuning amplifier device 335 to mixer device 337 [Figure 28]. Appellants also argue that Kane suggests the use of transformer coils for the unbalanced to balanced mode converter which is expressly against the teachings of the present invention. It is further argued that the relationship of the distributed constant tuning circuit and the imbalance-balance conversion circuit using a distributed constant line with three central sections as recited in claim 3 is simply not shown or suggested in Kane. Finally, appellants argue that the conventional balun of Takahashi is contrary to the teachings of the present invention, and Takahashi balances the oscillator signal rather than the tuning amplifier signal [brief, pages 4-8].

The examiner does not specifically address the limitations of claim 3, but rather, responds that two main concepts of appellants' invention are taught by Kane and that equivalent results to the invention of claim 3 are obtained by the Kane device [answer, pages 6-9]. Based on the record before us, we agree with appellants that the examiner has not demonstrated that the specific structure recited in claim 3 would have been obvious to the artisan within the meaning of 35 U.S.C. § 103 based on the teachings of Kane and Takahashi.

Although Kane does suggest that distributed constant lines having first and second central sections can be used to perform tuning amplification, tuning oscillation and mixing, we fail to see how the specific structure of claim 3 results from the mere observation of the examiner that certain concepts of appellants' invention are also present in Kane. Claim 3 is not simply directed to an inventive concept, but rather, recites a specific interconnection of circuitry which is not suggested by the collective teachings of Kane and Takahashi. Whether equivalent results are obtained by the modified Kane device is not an appropriate consideration in

determining whether the specifically claimed structure is obvious over the applied prior art.

For example, claim 3 recites that the third central conductor forms an imbalance-balance conversion section for sending a balanced output signal to the mixer. We agree with appellants that the embodiments of Kane do not send a balanced signal to the mixer of Kane. Even though a balanced signal may occur at some point in the embodiments of Kane's tuning amplifier device, such balanced signals are unbalanced again before they are output to Kane's mixer device. Therefore, we do not sustain the rejection of independent claim 3 or of claim 2 which depends therefrom.

Independent claim 4 recites many of the same limitations which were considered above with respect to claim 3. With respect to these similar limitations, the examiner and appellants rely on essentially the same arguments which were considered in the rejection of claim 3. Therefore, for reasons already discussed above, we conclude that the prior art relied on by the examiner and the analysis provided on this record is not sufficient to demonstrate the obviousness of the invention as recited in claim 4. Therefore, we do not

Appeal No. 96-2224
Application No. 08/047,498

sustain the rejection of claim 4.

In summary, we have not sustained the examiner's rejection of the claims under 35 U.S.C. § 103. Therefore, the decision of the examiner rejecting claims 2-4 is reversed.

REVERSED

Kenneth W. Hairston)	
Administrative Patent Judge))
)	
)	
)	BOARD OF PATENT
Jerry Smith)	
Administrative Patent Judge)	APPEALS AND
)	
)	INTERFERENCES
)	
Stuart N. Hecker)	
Administrative Patent Judge)	

dm

Jay H. Maioli
Cooper & Dunham
1185 Avenue of the Americas
New York, NY 10036